

## Abstract 97

### THE SYMPATHOMIMETIC RESPONSE TO A NOVEL EPHEDRA/CAFFEINE BASED DIETARY SUPPLEMENT IN HEALTHY OVERWEIGHT VOLUNTEERS.

Krieger DR<sup>1</sup>, Kalman DS<sup>1</sup>, Sosa D<sup>1</sup>, Schwartz HL<sup>1</sup>, Almada A<sup>2</sup>. <sup>1</sup> Miami Research Associates, Miami, FL. <sup>2</sup> MetaResponse Sciences, Aplos, CA.

In a prospective label-blinded clinical trial, we examined the sympathomimetic response to an ephedrine/caffeine/L-theanine-based weight loss product (Norexin™, Biotech Corporation) in 12 healthy overweight adults. Each subject ingested 15-mg ephedrine, 150-mg caffeine and 10 mg L-theanine twice daily for 14 days. Testing included body weight, percent body fat (BIA), systolic and diastolic blood pressure, electrocardiographs, hydration status (BIA), Profile of Mood States, Visual Analog Scales for sleep quality and stress levels, caloric intake monitoring, body temperature and fasting glucose. All subjects also underwent 2-hour post ingestion heart rate variability and blood pressure testing at each laboratory visit. Testing was conducted at baseline, day 3, day 7 and day 14. Baseline characteristics: Age=35.2±6.5y.o., BMI=34.1±6.7, Wt.=88.7±11.0kg, %BF=41.0±10.4%, HR=79±9.0 BPM, SysBP=118.0±9.8, DiaBP=75.3±5.2. In terms of sympathomimetic response to Norexin™ (heart rate variability, blood pressure, blood sugar, serial EKGs, temperature) there was no significant change from baseline. There were also no significant changes in sleep quality/habits or in perceived levels of stress. In terms of changes in weight and percent body fat, there was a significant time trend for reduction of both without reduction in caloric intake (-0.08kg/d and -0.23%/d, p=0.0496 and p=0.047 respectively). In conclusion, within the confines of this study, Norexin™ demonstrated the ability to induce weight and fat loss without appearing to induce measurable sympathomimetic effects.

*Funded in part by MetaResponse Sciences.*

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## Abstract 98

A PILOT STUDY EVALUATING THE EFFECTS OF AN EPHEDRINE AND FORSKOLIN-BASED PRODUCT ON BODY WEIGHT AND BODY COMPOSITION IN OVERWEIGHT, HEALTHY WOMEN. Carlton M. Colker, M.D.<sup>1</sup>, Melissa A. Swain, M.S., C.E.S.<sup>2</sup>, Leila Lynch, M.S., R.D.<sup>2</sup>, Department of Medicine, Greenwich Hospital<sup>1</sup>, Department of Clinical Research<sup>2</sup>, Peak Wellness Foundation, Inc. Greenwich, CT.

Based upon extensive prior art, we know that ephedrine and ephedrine-based products positively influence body weight and body composition through the mechanism of adrenergic thermogenesis. Forskolin (a non-adrenergic extract from the herb *Coleus forskohlii*) is known to increase levels of cAMP and, in this way, potentiate the thermogenic process. We evaluated the safety and efficacy of an ephedrine/forskolin-based product (Ripped Fuel Extreme™). Twenty-six overweight females (BMI ≥27 or BF% ≥25) were studied in a double blind, placebo-controlled 8-week clinical trial using an isocaloric diet (25 kcal/kg BW) in combination with moderate exercise (3x/wk). There were no statistically significant changes in BPP, EKG, spirometry, %O<sub>2</sub>, or blood tests. Fourteen subjects receiving product lost an average of 2.56 kg (p = 0.0010) while the 12 subjects receiving placebo lost an average of 0.49 kg (p = 0.2617). The product group lost 2.08% of their body fat (p = 0.0098) while maintaining lean mass (p = 0.8789) over the 8 weeks. In conclusion, the combination of this ephedrine and forskolin-based product is safe and effective within the confines of the study in reducing weight and improving body composition while preserving lean mass. Study sponsored in part by Twinlab, Inc., Hauppauge, NY.

## Abstract 99

## READY-TO-EAT CEREAL CONSUMPTION HABITS OF AMERICAN ADULTS: IS THERE A RELATIONSHIP WITH BODY MASS INDEX? Albertson, AM, Goebel, MT, Tobehmann, RC, Crockett, and SJ. The Bell Institute of Health and Nutrition, General Mills, Inc. Minneapolis, MN 55427

A dramatic increase in the prevalence of overweight and obesity in adults in the United States has raised many questions about the role of dietary intake and maintenance of normal weight. Dietary factors, with particular attention to the relationship of cereal consumption habits and BMI, were examined for adults ages 35-64 using the Bell Institute of Health and Nutrition Dietary Intake Study. This study analyzes 14-day diets of a nationally representative sample of 5,000 Americans collected from February 1998 through February 1999. Data from an additional 5,000 persons collected in 1999-00 is being added to the data set. Results indicate that approximately 65% of adults 35-64 years consumed cereal at least once in the two-week collection period. The sample (n=1898) was classified into 2 groups based on their reported consumption of ready-to-eat (RTE) cereal in 14 days (<7 times/14-days or 7+ times/14-days). Within these classifications, mean BMI and the proportion of adults who were overweight or obese (BMI ≥ 25) were identified. Adults who consumed 7+ servings of RTE cereal had a significantly lower mean BMI (p<0.01) than adults who consumed <7 servings. Women consuming 7+ servings of RTE cereal had lower mean BMI (24.7) than females who consumed <7 servings (26.06) (p<0.01). Men consuming 7+ servings of RTE cereal had lower mean BMI (25.9) than males who consumed <7 servings (26.8) (p<0.01). Additionally, the proportion of adult females who were classified as overweight or obese was significantly lower (p<0.01) for the 7+ cereal eater group (49%) versus the <7 serving group (57%). A similar trend was seen for the males (63% vs. 71%). These data suggest regular consumption of RTE cereal may play a role in helping adults maintain healthy BMI. There is need for additional research to determine the role of other dietary intake patterns that might contribute to lower BMI in adults.

## Abstract 100

## PSYCHOACTIVE ASPECTS OF NUTRITION IN THE TREATMENT OF WOMEN WITH BINGE-EATING DISORDER. Kent, J. Introduced by H. Ira Fritz, The Union Institute, Cincinnati, OH

Ingestion of sugars activates the endogenous opioid system, which in turn stimulates dopaminergic reward neurons. Opioid release is associated with increased food intake and sustained consumption, and priming is related to the activation of dopamine receptors. It was hypothesized that food selection, particularly sugars consumption, influences binge-eating episodes. Twenty-five women with binge-eating disorder were divided into 2 groups for an 8-week pilot study to compare the effects on binge eating of a low-sugar (LS) diet and a nonsugar-reduced (NR) diet. Presenting diets showed mean sugars intake of 21% of TEI and 40% of carbohydrate intake. Participants recorded daily food intake, binges and cravings. Body weight, body mass index (BMI), body fat, depression (BDI-II) and anxiety (STAI) were measured pre- and post-test. LS showed statistically nonsignificant decreases in body weight, BMI, body fat, and STAI-S, while NR showed nonsignificant increases in those values. All participants showed nonsignificant decreases in binge frequency, cravings frequency, and BDI-II and STAI-T. Sugars intake may be a factor in weight management and mood in binge-eating-disordered women and merits further investigation.

## Abstract 101

## TASTE STIMULATION INFLUENCES ON THE HEPATIC CYTOSOLIC GLUTAMIC PYRUVIC TRANSAMINASE ACTIVITIES IN FASTING RATS.

Naruse MM<sup>1</sup>, Kobayashi T<sup>1</sup>, Ohara I. Laboratory of Nutrition, Faculty of Home Economics, Aichi Gakuen University, Aichi, Japan

We examined if hepatic glutamic pyruvic transaminase (GPT) activities, which is well known to be closely related with alanine metabolism, were fluctuated by taste stimulation with palatable saccharin or with unpalatable quinine in severe fasting rats. Male Sprague-Dawley rats were fasting for 4 days. Animals were stimulated with 1 g of diet lacking flavor or containing saccharin or quinine.

Animals were sacrificed at 5, 10, 20 and 30 min after taste stimulations. Non-stimulating rats were used as the control. Liver was excised, homogenized and fractionated. Hepatic cytosolic GPT activities were measured.

In non-flavored diet stimulated group, GPT activities increased significantly at 10 min after taste stimulation compared with the control. Moreover, oral stimulation with saccharin resulted in the statistically significant rise in GPT activity at both 5 and 10 min, while there was no difference between quinine stimulated group and the control.

These results suggest that alanine metabolism is promoted efficiently and eating with gusto is significant on the maintenance of body functions even under severe fasting conditions.

## Abstract 102

## ALCOHOL AS A MEDICINAL COMPONENT OF FOOD FOR INDIVIDUALS WITH A CONSTITUTIONAL ENERGY DEFICIENCY. Anatoly Antonchukin, M.D., Ph.D., Director of the Analytical Biochemistry Department, Nulab, Inc., Los Angeles, California, USA.

The purpose: to concentrate attention on the possible role of alcohol as an important dietary factor for persons with energy insufficiency. Method: Analysis of scientific data.

The widespread biological phenomenon known as genetic polymorphisms, in particular single-nucleotide polymorphisms, brings about changes in the nucleotide sequence in genes. This causes variations in protein structures and in the activity of enzymes.

Variations in the activity of the enzymes that are involved in the formation of acetyl-CoA from pyruvate and the enzymes that participate in the citrate cycle lead to a reduced energy production in the mitochondria of body cells. Brain neurons are much more sensitive to such energy deficiency compared to other body cells.

During stress, cells waste more energy and their resistance to stress decreases because of the reduced energy supply. Depending on the degree of the energy deficiency, one individual will be fatigued, physically and mentally, at the end of the day, while another will feel tired continuously.

Ingested alcohol easily penetrates into mitochondria where it converts into acetaldehyde, acetate acetyl CoA, thus restoring the deficient acetyl-CoA. In addition to the formation of acetyl-CoA, oxidation of alcohol into acetaldehyde and acetate delivers electrons via NADH to the respiratory chain.

If no deficit of acetyl-CoA but citrate cycle is inefficient, alcohol is converted only to acetate, which is released through the mitochondria. In this case, the inefficiency of the citrate cycle is compensated for by two redox equivalents transferred by NADH to the respiratory chain during oxidation of one alcohol molecule to acetate.

Because other foods cannot easily compensate for such energy deficiency, alcohol is an important "medicinal compound" for individuals who have genetically-determined variations in their energy metabolism. It can explain, at least in part, the need some persons have for alcohol consumption and the cardio-protective effects of a moderate intake of alcohol.